

REMARKS

Claims 1-10 were pending in this application. Claims 3 and 5 were withdrawn from consideration. Claims 1, 6-8, and 10 are currently amended. Claims 2, 4, and 9 have been cancelled. New claim 11 was added, supported by the specification at e.g., page 19, last full paragraph, of the specification as filed. Upon entry of this amendment, claims 1, 6-8, and 10-11 will be pending in this application. No new subject matter has been added.

Claim Amendments

Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. No new subject matter has been added.

Claim 1 has been amended to clarify that X comprises a structure represented by formula 3, wherein m^4 and m^5 are each independently integers of not less than 1 but not more than 6, and R' is a hydrogen (H) or R. Claim 1 has also been amended to clarify that R comprises a substituent derived from the sugar chain selected from the group consisting of Group (101). Claim 1 has also been amended to clarify that Y comprises a hydrocarbon structure having an S-S bond or an S-H group. Claims 6-8 have been amended in light of other claim amendments or to clarify the language. Claim 10 has been amended to clarify that the method comprises analyzing intermolecular interaction by surface plasmon resonance (SPR). Support for these amendments may be found throughout the specification as originally filed and originally filed claims 2 and 4. Claims 2, 4, and 9 have been cancelled.

Claim Rejections Under 35 USC §112

Claims 1-2, 4 and 6-10 are rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2 and 4 have been cancelled.

Claim 1

The Examiner rejected claim 1 because the terms “hydrocarbon derivative chains”; “aromatic amino group”; “Y is a sulfur atom”; and “a hydrocarbon structure containing a sulfur atom” are allegedly unclear. These terms have been removed in amended claim 1, thereby rendering this basis for rejection moot.

The Examiner has also rejected claim 1 based on the recitation of “the sugar having a reducing end and being bonded to the linker compound through the aromatic amino group.” Applicants note that this recitation was removed from the claims in the PCT Article 34 Amendments filed on May 11, 2006, thereby rendering this basis for rejection moot.

In light of the amendments and arguments presented above, Applicants respectfully request that the rejections to claim 1 be withdrawn.

Claim 7

The Examiner rejected claim 7 because it is unclear what kind of linkage would be encompassed by the situation when m^4 and $m^5 = 0$. Claim 1 has been amended to clarify that m^4 and m^5 are each independently integers of not less than 1. Claim 7 depends from claim 1. Therefore, claim 7 no longer encompass when m^4 and $m^5 = 0$, and Applicants respectfully request that the rejections to claim 7 be withdrawn.

Claim 10

The Examiner has requested that the term “supporter” be replaced with the term “support”. Claim 10 has been amended accordingly.

Claim 10 has also been rejected as being incomplete for omitting essential steps. Claim 10 has been amended to clarify that the intermolecular interaction is analyzed by a surface Plasmon resonance (SPR) measurement.

In light of the claim amendments and arguments presented above, Applicants respectfully request that the rejections to claim 10 be withdrawn.

Claim Rejections Under 35 USC §101

Claim 9 is rejected under 35 U.S.C. 101 due the claimed recitation of a use, without setting forth any steps involved in the process. Claim 9 has been cancelled, thereby rendering the rejection moot. Applicants respectfully request that the rejection to claim 9 be withdrawn.

Claim Rejections Under 35 USC §102

Claims 1-2 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Arano et al. (Tentative Lecture Proceedings II in the 79th Spring Meeting, Chemical Society of Japan 2001, hereinafter "Arano Tentative Lecture Proceedings"). Claims 2 and 9 have been cancelled.

Claim 1 has been amended to clarify that R comprises a substituent derived from the sugar chain selected from the group consisting of Group (101). Arano Tentative Lecture Proceedings, do not disclose compounds where R comprises a substituent derived from the sugar chain selected from the group consisting of Group (101). The Arano Tentative Lecture Proceedings reference discloses compounds where R comprises a substituent derived from a sulfated sugar heparin (GlcNS6DS-IdoA2S). Therefore, the Arano Tentative Lecture Proceedings reference does not anticipate the currently amended claims, and Applicants respectfully request that this basis for rejection be withdrawn.

Claims 1-2 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Arano et al. (Chemical Society of Japan 2002, page 137, 82nd Fall Meeting, hereinafter "Arano Chemical Society of Japan"). Claims 2 and 9 have been cancelled.

The same arguments discussed above for the cited Arano Tentative Lecture Proceedings reference apply to the Arano Chemical Society of Japan reference, as the reference does not disclose compounds where R comprises a substituent derived from the sugar chain selected from the group consisting of Group (101). Therefore, the Arano Chemical Society of Japan reference does not

anticipate the currently amended claims, and Applicants respectfully request that this basis for rejection be withdrawn.

Claims 1-2 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Suda et al. (Japanese Patent Application No. 2003-083969). Claims 2 and 9 have been cancelled.

The same arguments discussed above for the cited Arano references apply to the Suda et al. reference, as the reference does not disclose compounds where R comprises a substituent derived from the sugar chain selected from the group consisting of Group (101). Suda et al. disclose compounds where R comprises a substituent derived from glucose or GlcNS6S-IdoA2S. Therefore, the Suda et al. reference does not anticipate the currently amended claims, and Applicants respectfully request that this basis for rejection be withdrawn.

Claim Rejections Under 35 USC §103

Claims 4 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suda et al. (Japanese Patent Application No. 2003-083969). Claim 4 has been cancelled.

In the current Office Action, the Examiner followed a discussion of Suda et al. with Nelson et al. (U.S. Pat. No. 6,756,354). Thus, Applicants interpreted the Examiner's rejection to be 35 U.S.C. 103(a) Suda et al. in view of Nelson et al.

Claim 1 has been amended to clarify that R comprises a substituent derived from the sugar chain selected from the group consisting of Group (101). Claim 10 depends from claim 1. Suda et al. do not disclose compounds where R comprises a substituent derived from the sugar chain selected from the group consisting of Group (101). The Suda et al. reference discloses compounds where R comprises a substituent derived from glucose or a sulfated sugar heparin (GlcNS6DS-IdoA2S). The addition of Nelson et al. does not cure the deficiency of the Suda et al. reference as Nelson et al. also do not disclose compounds where R comprises a substituent derived from the sugar chain selected from the group consisting of Group (101). Therefore, the present claims are not obvious based on Suda et al. in view of Nelson et al.

Claims 1-2, 4 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al. (Tentative Lecture Proceeding, Chemical Society of Japan 2001) in view of Sumida et al. (Japanese Patent Application No. 2002/80488 A) and Tomalia et al. (U.S. Patent No. 5,714,166) and further in view of Nelson et al. (U.S. Patent No. 5,955,729). Claims 2, 4, and 9 have been cancelled.

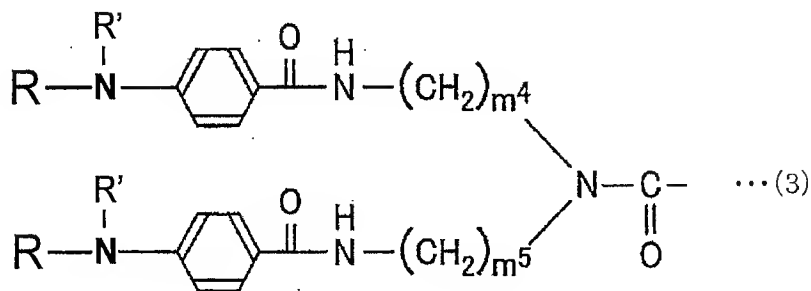
None of the cited references disclose compounds where R comprises a substituent derived from the sugar chain selected from the group consisting of Group (101). Therefore, the present claims are not obvious based on the cited references.

Double Patenting

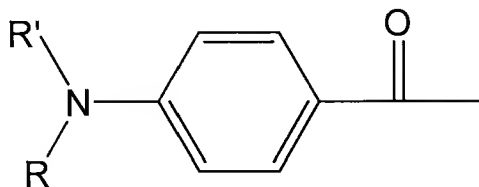
Claims 1-2, 4 and 6-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-18 of U.S. Patent No. 7,183,067 in view of Nelson et al. (U.S. Patent No. 6,756,354)—note that the Office Action lists this as no. 6,756,345 but that appears to be a typographical error, and the correct patent number for Nelson is believed to be US 6,756,354.

According to the Examiner, the '354 patent discloses a linker compound which is "similar to the linker compounds of instant application differing only by anchoring group that attaches the linker compound to a solid surface."

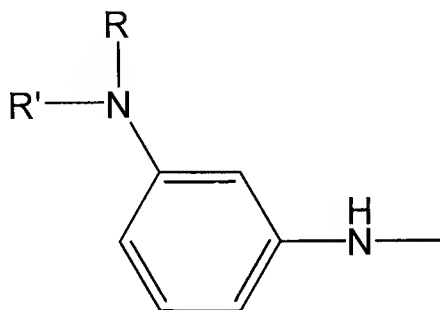
The present amendment overcomes this rejection. Claim 1 as amended recites a linker compound that comprises a structure represented by formula (3):



The claims of US patent no. 7,183,067 do not disclose such compounds; rather, in its compounds, the structure portion that appears most nearly relevant to that of formula (3) is quite different. For example, the terminal aryl group in the claims is of general formula



While the seemingly analogous portion of the structures in the claims of the '067 patent have this formula:



The structure in the claim has a 1,4-disubstituted phenyl ring, while the cited reference has a 1,3-disubstituted phenyl ring; and the structure in the claim also has a carbonyl where the compounds in the cited reference have -NH-. In view of the amendment, the claims do not contain structures that are obvious in view of the claims of the '067 patent, and the Examiner has not pointed to anything in Nelson that would disclose or suggest modifying this portion of the structures in the present claims. Accordingly, the allegation of obviousness type double patenting over US 7,183,067 is overcome, and the applicants request that this rejection be withdrawn.

Claims 1-2, 4 and 6-10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 7,320,867 (the "'867 Patent"). Applicants respectfully disagree with the Examiner's assertion. However, in the interest of prosecution efficiency and in order to advance the case toward allowance, a terminal disclaimer over the '867 Patent is submitted herewith.


CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing **Docket No. 247322003800**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

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